

U.S. Application No. 10/730,459
Supplemental Amendment

MAY 8 5 2010

PATENT
930009-2010IN THE CLAIMS

1. (Currently Amended) A hydroentangling apparatus for the production of a hydroentangled nonwoven product, the improvement comprising:
a hydroentangling support fabric having the mechanical properties and structural strength to reflect liquid jetted from the hydroentangling apparatus and comprising flat filaments, wherein said support fabric is in a continuous loop or made endless.
2. (Previously Presented) The apparatus of claim 1, wherein said support fabric includes machine direction (MD) filaments and cross-machine direction (CD) filaments and said flat filaments include only a portion of said MD filaments.
3. (Withdrawn) The apparatus of claim 1, wherein said fabric includes MD filaments and CD filaments and said flattened filaments include all of said MD filaments.
4. (Previously Presented) The apparatus of claim 1, wherein said support fabric includes MD filaments and CD filaments and said flat filaments include only a portion of said CD filaments.
5. (Withdrawn) The apparatus of claim 1, wherein said fabric includes MD filaments and CD filaments and said flattened filaments include all of said CD filaments.
6. (Previously Presented) The apparatus of 1, wherein said support fabric includes MD filaments and CD filaments and said flat filaments include a combination of said MD filaments and said CD filaments.
7. (Previously Presented) The apparatus of claim 1, wherein said support fabric is a multilayer weave fabric and said flat filaments are incorporated into only one layer.
8. (Previously Presented) The apparatus of claim 7, wherein said one layer of said support fabric is the wear side layer.

U.S. Application No. 10/730,459
Supplemental Amendment

PATENT
930009-2010

9. (Withdrawn) The apparatus of claim 7, wherein said one layer of said support fabric is the forming side layer.

10. (Withdrawn) The apparatus of claim 1, wherein said fabric is a triple layer fabric and said flattened filaments are incorporated into only one layer.

11. (Withdrawn) The apparatus of claim 10, wherein said one layer of said fabric is the wear side layer.

12. (Withdrawn) The apparatus of claim 10, wherein said one layer is the forming side layer.

13. (Previously Presented) The apparatus of claim 1, wherein the permeability of said support fabric is greater than 350 cfm.

14-22. (Cancelled)

23. (Currently Amended) An improved hydroentangling support fabric in a hydroentangling apparatus for production of a hydroentangled nonwoven product, the improvement comprising:

 said hydroentangling support fabric in the hydroentangling apparatus having the mechanical properties and structural strength to reflect liquid jetted from the hydroentangling apparatus and comprising flat filaments, wherein said support fabric is in a continuous loop or made endless.

24. (Withdrawn) The support fabric in the hydroentangling apparatus of claim 23, wherein said flattened filaments are formed through extrusion prior to weaving of said support fabric.

U.S. Application No. 10/730,459
Supplemental Amendment

PATENT
930009-2010

25. (Previously Presented) The support fabric in the hydroentangling apparatus of claim 23, wherein said flat filaments are formed by calendering non-flat filaments prior to weaving of said support fabric.
26. (Previously Presented) The support fabric in the hydroentangling apparatus of claim 23, wherein said flat filaments are formed by calendering a source fabric.
27. (Previously Presented) The support fabric in the hydroentangling apparatus of claim 26, wherein said calendering is applied to only one side of said source fabric.
28. (Withdrawn) The support fabric in the hydroentangling apparatus of claim 26, wherein said calendering is applied to both sides of said source fabric.
29. (Withdrawn) The support fabric in the hydroentangling apparatus of claim 23, wherein said flattened filaments are formed by sanding a source fabric.
30. (Cancelled)
31. (Previously Presented) The support fabric in the hydroentangling apparatus of claim 23, wherein said flat filaments are incorporated into said support fabric during production of said support fabric.
32. (Currently Amended) The support fabric in the hydroentangling apparatus of claim 23 wherein said support fabric includes a plurality of layers structured to allow water jetted from the hydroentangling apparatus to pass through a forming surface layer and an intermediate layer and reflect off the a wearside layer when said water is directed at the fabric in a direction perpendicular, or substantially perpendicular to the plane in which the flattened yarns lie have permeability at a forming site surface and an intermediate layer, but to reflect liquid for hydroentangling at a wearside layer.

U.S. Application No. 10/730,459
Supplemental Amendment

PATENT
930009-2010

33. (New) The apparatus of claim 1 wherein said the flat filaments of the support fabric are incorporated into the structure of the fabric such that they include mechanical and structural properties, the mechanical and structural properties being selected from the group consisting of:

a weave thickness T' that is smaller than the thickness T , wherein T represents a thickness without said flat filaments;

a weave more resistant to water flow in a direction perpendicular or substantially perpendicular to the plane in which a plurality of CD monofilaments lie as compared to a fabric without said flat filaments;

a structure that reduces entangling of fibers to the fabric surface as compared to a fabric without said flat filaments;

improved MD/CD tensile ratios as compared to a fabric without said flat filaments;

a structure that improves the fabric's reflection of water jets as compared to a fabric with non-flat filaments; and

a structure that improves release of the fiber web from the hydroentangling fabric after entangling as compared to a fabric without said flat filaments.

34. (New) The apparatus of claim 1, wherein the liquid is jetted from the hydroentangling apparatus at pressures from at least 200 psi.

35. (New) The support fabric in the hydroentangling apparatus of claim 23 wherein said the flat filaments of the support fabric are incorporated into the structure of the fabric such that they include mechanical and structural properties, the mechanical and structural properties being selected from the group consisting of:

U.S. Application No. 10/730,459
Supplemental Amendment

PATENT
930009-2010

a weave thickness T' that is smaller than the thickness T, wherein T represents a thickness without said flat filaments;

a weave more resistant to water flow in a direction perpendicular or substantially perpendicular to the plane in which a plurality of CD monofilaments lie as compared to a fabric without said flat filaments;

a structure that reduces entangling of fibers to the fabric surface as compared to a fabric without said flat filaments;

improved MD/CD tensile ratios as compared to a fabric without said flat filaments;

a structure that improves the fabric's reflection of water jets as compared to a fabric with non-flat filaments; and

a structure that improves release of the fiber web from the hydroentangling fabric after entangling as compared to a fabric without said flat filaments.

36. (New) The support fabric in the hydroentangling apparatus of claim 23, the wherein the liquid is jetted from the hydroentangling apparatus at pressures of at least 200 psi